

WHAT IS CLAIMED IS:

- 1 1. In a power plant utilizing a process to remove components harmful to the atmosphere  
2 from a stream of flue gas, wherein said process includes the injection of a vaporized  
3 aqueous mixture in the stream of flue gas, the improvement comprising:  
4 a vaporization chamber pre-heated to a vaporization temperature in order to  
5 vaporize said aqueous mixture prior to the injection thereof into said stream of flue gas,  
6 said vaporization chamber being pre-heated by an independent heat source.
- 1 2. The power plant according to claim 1 wherein said independent heat source is a band  
2 heater.
- 1 3. The power plant according to claim 1 wherein said independent heat source is a blanket  
2 heater
- 1 4. The power plant according to claim 1 wherein said independent heat source is an electric  
2 heat tracing apparatus.
- 1 5. The power plant according to claim 1 wherein said independent heat source is an steam  
2 heat tracing apparatus.
- 1 6. The power plant according to claim 1 wherein said aqueous mixture comprises ammonia  
2 in the range of less than 29% by volume and the balance being water.
- 1 7. In a power plant utilizing a process to remove components harmful to the atmosphere  
2 from a stream of flue gas, wherein said process includes the injection of a vaporized  
3 aqueous mixture in the stream of flue gas, the improvement comprising:

4                   a vaporization chamber pre-heated to a vaporization temperature in order to  
5                   vaporize said aqueous mixture prior to the injection thereof into said stream of flue gas,  
6                   said vaporization chamber being pressurized from an air assembly and being pre-heated  
7                   by an independent heat source.

1   8.       In the power plant of claim 7, said air assembly comprising a diffusing air fan in  
2                   communication with an electric heater.

1   9.       A process to remove components harmful to the atmosphere from a stream of flue gas  
2                   comprising:

- 3                   a.   pre-heating a vaporization chamber via an independent heating source to a  
4                   vaporization temperature;
- 5                   b.   introducing an aqueous mixture into said vaporization chamber thereby causing  
6                   the aqueous mixture to vaporize;
- 7                   c.   injecting said vaporized aqueous mixture into a stream of flue gas creating an  
8                   aqueous mixture/flue gas mixture; and
- 9                   d.   passing said aqueous mixture/flue gas mixture over a catalyst.

1   10.      The process of claim 9 further comprises maintaining said pre-heated vaporization chamber  
2                   at said vaporization temperature via a convection process.

1   11.      The process of claim 9 wherein said aqueous mixture comprises ammonia in the range of  
2                   less than 29% by volume and the balance being water.